REMARKS

Overview

In the Office Action under reply, claims 1-33 are pending. Applicants acknowledge with appreciation the Examiner's withdrawal of one of the rejections under 35 U.S.C. §112, second paragraph, from the previous Office Action. The pending claims have been rejected as follows:

(1) claims 1-33 stand rejected under 35 U.S.C. §112, second paragraph, as indefinite;

(2) claims 1-33 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement; and

(3) claims 1-33 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

These rejections are addressed in part by the amendments made herein, and are otherwise traversed for the reasons set forth below.

Claim Amendments

By the amendments made herein, claims 1, 2, 5, 6, 8-11, 19-22, 27, and 32 have been amended. Claim 1 has been amended to incorporate the limitations of claim 4. Claim 1 has also been amended to specify an amine group, as well as a cyclic ether group (supported by the specification at paragraph [0021]), thereby clarifying the claim language. In light of the amendments to claim 1, claim 4 has been canceled. Claims 2, 5, 6, and 8-11 have been amended to be consistent with claim 1. Claim 19 has been amended similarly as with claim 1, and claims 20-22, 27, and 32 have been amended to be consistent with claim 19. Claim 26 has been canceled. No new matter has been added by these amendments. Applicants note that the claim amendments are made without prejudice and for the sole purpose of expediting prosecution. Applicants hereby reserve the right to prosecute canceled subject matter in one or more divisional applications.

Rejection under 35 U.S.C. §112, second paragraph

Claims 1-33 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that amine-containing compounds, crown ethers,

acidic groups, transition metal binding groups and diazo groups are all indefinite, and that "what is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce phrase or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term 'means for'" (Action at pages 2-3). Applicants traverse this rejection.

The Examiner acknowledges that "amine group" is an art-recognized term, but contends that "amine-containing compounds" is not. To clarify the claim language, applicants have amended the claims to refer to "amine group-containing compounds." Since the Examiner acknowledges that "amine group" is an art-recognized term, it must now be concluded that an "amine group-containing compound" would be recognized in the art as referring to any compound that contains an amine group.

It should be noted that the art-recognized term "amine group" describes a chemical substituent or moiety, and is not typically associated with any particular function. Therefore, the term "amine group-containing compound" does not describe any function, but rather describes a characteristic structural feature. One of ordinary skill in the art would instantly be able to determine whether a given compound is an amine-containing compound simply by checking the *structure* of the compound for the presence of an amine group (e.g., $-NH_2$, –NHR, etc.).

Regarding "crown ethers," applicants have amended the claims to recite a cyclic ether. Since one of ordinary skill in the art would immediately be able to determine whether a given compound contains a cyclic ether simply by checking the *structure* of the compound, it must be recognized that the claims refer to structural characteristics rather than functional characteristics.

Regarding "acidic groups," the term clearly refers to a structural feature of the compounds described in the claims, and the skilled artisan would be capable of envisioning a particular structure. The term is commonly used in the art, as evidenced by the fact that nearly every introductory chemistry textbook contains a discussion of acids and bases (and identifies acidic groups). The skilled artisan would understand that acidic groups are groups that are able to act as proton donators or electron pair acceptors. Identification of acidic groups is generally well within the abilities of the skilled artisan, and simply involves looking at the *structure* of the compound in question. The fact that the term "acidic group" is well known in the art is further evidenced by the numerous US patents that have the term in the claims (a search of the USPTO database for patents containing "acidic group" in the claims returns over 500 patents issued since

1976). For example, US Pat. No. 7,211,135 states, in claim 1, "[a]n aqueous colloidal gold solution comprising an aqueous medium and... a stabilizer comprising a mercapto group (--SH) and an ***acidic group,*** wherein said solution has a gold content of 8 to 10% by weight" (emphasis added). In fact, the term "acidic group" is found in US patents from a variety of US classifications, indicating that the term is recognized by those of ordinary skill in a variety of arts. Applicants recognize that the Examiner is not bound by the actions and decisions of other Examiners, but applicants also believe that it is desirable to achieve the greatest amount of consistency within decisions taken by the USPTO as a whole.

Regarding "transition metal binding groups," applicants have amended the claims to recite that the transition metal binding group is selected from alkyls, heteroalkyls, alkenyls, heteroalkenyls, aryls, heteroaryls, alkaryls, and alkheteroaryls. Accordingly, the claims recite structural features of the compounds described in the claims. In conjunction with the specification (for example, paragraphs [0025] to [0028]), the skilled artisan is able to envision a particular structure useful in the claimed methods.

Regarding "diazo groups," the specification (e.g., paragraph [0029]) provides a definition of the diazo group (=N_2), and one of ordinary skill would immediately be able to determine whether a given compound contains such a group simply by looking at the *structure* of the compound.

First rejection under 35 U.S.C. §112, first paragraph

Claims 1-33 stand rejected under 35 U.S.C. §112, first paragraph, because the specification is not enabling. This rejection is traversed.

The Examiner maintains the rejection from the previous Office Action, and in response to applicants' arguments set forth in the response dated October 6, 2006, states that "[t]he claims as presently recited read on processes involving a vast range of compounds, e.g. all amine-containing compounds. The limited disclosure and exemplification, noted in the previous office action, does not enable this vast scope. There is no predictability between, for example NH2 and methylamine-crown ether. To determine which of, for example, all known acidic groups would work in the claimed process would require undue experimentation."

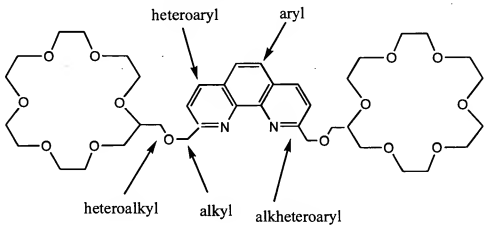
As amended, the claims are directed to amine group-containing compounds selected from amino acids, peptides, and proteins. These compounds are similar in that peptides and proteins

are strands of amino acids. Thus, amino acids, peptides, and proteins share numerous and important structural features. The skilled artisan would understand that the claimed methods are clearly enabled for these amine group-containing compounds.

Regarding acidic groups, the Examiner's implication that the claims are only enabled for benzoic acid is unnecessarily limiting. The specification states that "[s]uitable acidic groups include, by way of illustration *and not limitation*, benzoic acid" (paragraph [0023], emphasis added). By this statement, the skilled artisan would understand that other acidic groups (such as, for example, other carboxylic acids, sulfonic acids, etc.) would be suitable for the compounds of the invention. Furthermore, because of the advanced state of the art of synthetic organic chemistry, the skilled artisan would be quite capable of swapping one acidic group for another in the preparation of compounds described by the claims. Such synthetic modifications are routinely carried out by synthetic organic chemists.

Regarding the transition metal binding groups, the Examiner acknowledges that the specification is enabling for using the transition metal binding groups listed in paragraph [0026] of the specification, but avers that the specification "does not reasonably provide enablement for using all eight radicals listed in claim 4" (Action at page 3).

As amended, the claims are directed to transition metal binding group selected from alkyls, heteroalkyls, alkenyls, heteroalkenyls, aryls, heteroaryls, alkaryls, and alkheteroaryls. Examples of many of these groups can be found in the specification as filed. Furthermore, some transition metal binding groups have structural features of more than one of these groups. See, for example, compound 1 (page 13). As shown in the image below, compound 1 exemplifies a compound containing a transition metal binding group that may be classified as an alkyl, heteroalkyl, aryl, heteroaryl, and/or alkheteroaryl.



Numerous other examples of transition metal binding groups that could be classified into one or more of the eight groups listed above can be found in the specification.

Regarding the Examiner's statements that "[t]here is insufficient disclosure of starting materials that would place such a diverse genus of compounds in possession of the public... [and] there is no reasonable assurance that such an alleged genus of compounds would possess all of the alleged properties for use," reference is made to the arguments set forth in Applicants' response dated October 6, 2006. In light of such arguments and the claim amendments made herein, the disclosure fully enables the claims, and applicants respectfully request withdrawal of the rejection.

Second rejection under 35 U.S.C. §112, first paragraph

Claims 1-33 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. This rejection is traversed.

The Examiner continues to reject the claims because the phrases "amine containing compounds," "crown ether group," "acidic groups," "transition metal binding groups," and "diazo groups" are not recognized in organic chemistry and do not adequately describe the invention. The Examiner states that "Applicants' functional definitions in the claimed formula simply lack the precision required by the Court of Appeals for the Federal Circuit" (Action at page 6). The Examiner does not, however, cite any Federal Circuit case holding that a claim to a class of small organic molecules lacked written description. The Examiner relies instead on older cases about DNA (*Regents v. Eli Lilly* and *Fiers v. Revel*). The seeming breadth of those cases' holdings is undermined by more recent cases such as *Capon v. Eshhar*, 418 F.3d 1349 (Fed. Cir. 2005) (reversing the Board of Appeals and finding written description adequate in light of accessible information in the scientific literature).

Applicants believe that the terms used in the amended claims (i.e., amine group-containing compounds, cyclic ether groups, and transition metal binding groups that are alkyls, heteroalkyls, alkenyls, heteroalkenyls, aryls, heteroaryls, alkaryls, or alkheteroaryls) are recognized in organic chemistry, intelligible to any person of skill in the art, and therefore adequately describe the invention.

In light of the amendments to the claims, applicants submit that the claims comply with the written description requirement under 35 U.S.C. §112, first paragraph. Accordingly, applicants respectfully request withdrawal of the rejection.

CONCLUSION

Applicants submit that the claims of the application are in condition for allowance. Applicants respectfully request withdrawal of the rejections, and prompt issuance of a notice of allowance. If the Examiner has any questions concerning this communication, or would like to discuss the application, the art, or other pertinent matters, a telephone call to the undersigned would be welcomed.

Respectfully submitted,

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